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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,289	03/31/2000	Mitsuhiro Agehari	P/2041-47	9847

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STEVEN I. WEISBURD
DICKSTEIN SHAPIRO MORIN & OSHINSKY
1177 AVENUE OF THE AMERICAS 41ST FLOOR
NEW YORK, NY 10036-2714

EXAMINER	
TRAN, KHANH C	

ART UNIT	PAPER NUMBER
2631	13

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/540,289	Applicant(s) AGEHARI, MITSUHIRO	
	Examiner Khanh Tran	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The Request for Reconsideration filed on 12/08/2003 has been entered. Claims 1-4 are pending in this Office action.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

3. Applicant's arguments, see pages 3-7 of the Request for Reconsideration, filed on 12/08/2003, with respect to the rejection(s)of claim(s) 1-2, and 4 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Van Nee U.S. Patent 6,175,550 B1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Nee U.S. Patent 6,175,550 B1.

Regarding claim 1, Van Nee invention is directed to OFDM modulation schemes that are suitable to provide a wide range of information transfer rates in a wide range of physical environments. Figure 1 illustrates an OFDM transmitter 10 having signal circuitry 11 which receives a data stream of data bits from a data source 12. In column 3, line 66 through column 4, line 17, the coding block 14 receives the data stream and partitions the data stream into successive groups or blocks of bits. The coding block 14 introduces redundancy for forward error correction coding. The blocks of coded data bits are input into N-points complex Inverse Fast Fourier Transform (IFFT) 16. The output of the IFFT 16 is parallel-to-serial converted to produce an OFDM symbol. The RF transmitter 22 transmits the OFDM symbol through an antenna 24. Van Nee further discloses in certain embodiments according to other aspects of the present invention, variable data rate with OFDM transmitter are achieved by using different forward error correction coding schemes and/or variable modulation schemes for each carrier as controlled by a dynamic control circuitry 15. Clearly, each combination of coding scheme and modulation scheme produces different transmission data rate. The dynamic control circuitry 15 is also responsive to the external settings as shown in figure 1. The clock 17 provides a time base for the coding 14, the IFFT 16, the cyclic prefix and windowing 18, and the D/A 20.

Van Nee does not show in figure 1 a data processing means for reading in data having a bit width suitable for the modulation system corresponding to the input modulation mode.

However, as mentioned above, the coding block 14 receives data stream and partitions the data stream into successive groups or blocks of bits, hence, it would have been obvious for one of ordinary skill in the art at the time of the invention that the coding block 14 includes a data processing section in the front end to read in data having a bit width suitable for the modulation system. Furthermore, the dynamic control circuitry 15 is also responsive to the external settings as shown in figure 1 to set the coding rate / modulation scheme for a particular data rate.

Regarding claim 2, as recited in claim 1, the coding block 14, including a data processing section in the front end to read in data, receives the data stream and partitions the data stream into successive groups or blocks of bits. Van Nee does not show explicitly a transmission memory for storing transmission data of m-bit strings and a memory for temporarily storing the data of n-bit strings as claimed. As well known in the art, data is read in and always buffered at the front end. Hence, as would be appreciated by one of ordinary skill in the art, the coding block 14, as taught by Van Nee, would also include a buffer (or memory) large enough to hold transmission data of m-bit strings. As recited above, the coding block 14 partitions the data stream into successive groups or blocks of n-bits. Evidently, the coding block 14 converts data of m-

bit strings into groups or blocks of n-bit strings to be used for coding processing. The coding block 14 would inherently include a memory for temporarily storing the data of n-bit strings.

Regarding claim 4, the control circuit 15 shown in figure 1 (column 4, line 58 through column 6, line 10) scales operating parameters and characteristics by the controlling the clock 17 to adjust the time base clock. Clearly, the control circuit 15 dynamically determines the transmission timing as claimed. The blocks of coded data bits are input into a complex IFFT 16 for producing an OFDM symbol. Hence, the complex IFFT 16 as taught by Van Nee corresponds to the modulation data allocation circuit as claimed in the patent application. Lastly, a RF transmitter 22 transmit the modulation data according to the time base clock.

Allowable Subject Matter

5. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 703-305-2384. The examiner can normally be reached on Tuesday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.

KCT

KHAI TRAN
PATENT EXAMINER